



Evidence-Based Quality Improvement Initiative Results in Pressure Injury Prevention in Australian Intensive Care Setting

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Introduction

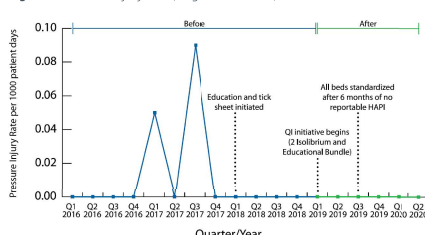
Pressure injury (PI) is associated with decreased patient quality of life, increased morbidity, and excess costs. It is estimated that in Australia, the average daily cost by PI stage ranges from AU\$26.42/day to AU\$37.17 per day, with an overall cost for PI treatment of approximately AU\$98,489,22.1

Evidence-based, nurse-led PI prevention has been successful, as reported by a hospital in Brisbane, Australia, with PI prevalence decreasing from 13.7% in 2002 to 4.0% in 2012. Miles et al reported that key aspects of that successful PI prevention program were implementation of evidence-based best practices coupled with ongoing staff education and awareness campaigns, investment in effective PI prevention devices, and executive support. As part of ongoing continuous quality improvement (QI) efforts at Epworth Freemasons Health Care, we implemented a similar QI initiative on an intensive care unit (ICU). The following outcomes story describes our successful efforts that have resulted in sustained outcomes.

Figure 1. Pressure area guide tick sheet

Pressure Area Guide		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Interventions required								
Initial risk assessment to be completed within 8 hours of admission and daily thereafter								
Physical skin assessment due at least every 4 hours of admission and every 4 hours thereafter								
Patients to be turned daily to alternate positions, about their isopod with pre-balanced turning angle								
Skin to be treated with suitable moisture, barrier creams etc								
Reassessed assessment to be undertaken daily								
Repositioning to be undertaken at all times (heel wedges, heel protectors, heel lifts beds etc)								
2 - 4 hourly repositioning (on one person) (documented time and position adjusted)								
Repositioning to be undertaken on one person								
Patients to be turned on air mattress (alternating position)								
Medical devices to be repositioned 12 hourly (due assessment to be undertaken and documented)								
Site inspection (in particular high risk areas) to be completed at least once by both the caregiver and the patient								
Special protection dressing in situ								

Figure 2. Pressure injury rate (stage 3 and above)



Methods

Clinical setting: This QI initiative took place on an 8-bed ICU.

Root cause analysis: Before the intervention, we conducted multiple root cause analyses using in-depth case reviews, which resulted in the development and roll out of an educational bundle. Of note, any Stage 3 PI triggers a case review.

Business case development: After interpreting the results of the root cause analyses, we developed a business case addressing the following areas to demonstrate the need for a financial investment in mattresses:

- ✓ Background
- ✓ Cost
- ✓ Benefits
- ✓ Risk Management
- ✓ Recommendation

Interventions: After successful presentation of the business case and trialing multiple mattresses, the ICU purchased and replaced all mattresses with powered support surfaces*. Two beds were purchased initially, with the remaining 6 beds purchased after a few months of improved PI outcomes.

Education: The educational bundle provided to the staff covered the following topics:

- Education on Pressure Area Care learning package and tick sheet to ensure compliance and accountability (used for 3 months and embedded into practice thereafter).
- Instructions on how to order powered support surfaces for discharges of susceptible patients to the ward

Metrics: Quantitative metrics included the number of pressure injuries from 2016 through the second quarter of 2020. Hospital-acquired PIs are collated at the end of each month. The PI data results are shared in team meetings on a monthly basis.

Results

This QI initiative has successfully decreased Stage 3, 4, and unstageable PIs for a sustained period of time (Figure 2).

Clinical Implications

We attribute the success of this QI initiative to the development of an evidence-based business case, executive support, willingness of the hospital to invest in technology to maximize PI outcomes, and caregiver education. As a result of this intervention, the ICU team successfully decreased cases of Stage 3, 4, and unstageable PIs, resulting in

- ✓ Improved patient journey
- ✓ Reduced length of stay
- ✓ Financial sustainability